AVAILABILITY AND COMPLIANCE WITH COVID-19 PREVENTIVE PROTOCOLS IN SPORT ARENAS DURING TRAINING AND COMPETITIONS IN SOUTH WEST, NIGERIA

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Abstract
Due to the high risk of COVID-19 transmission in sporting activities, relevant sports authorities across the globe have established preventive protocols for COVID-19 in sports trainings and competitions. The purpose of this study was to assess the availability and compliance with COVID-19 preventive protocols in sports arenas in southwestern Nigeria. The study employed a cross-sectional descriptive survey research design. The study sample consisted of 220 respondents comprising 160 athletes, 20 sports administrators, and 40 spectators from four (4) states in Southwest Nigeria. A multi-stage sampling approach was used, including cluster, stratified, random, and convenience sampling techniques. A structured questionnaire with elements of a 3-point Likert scale was used as an instrument for data collection. The study found that standardized Covid-19 preventive protocols were available in sports arenas in the study area, with a high level of compliance with the protocols among the athletes (2.26 ± 0.55), spectators (2.40 ± 0.50), and sports administrators (2.50 ± 0.68). The study concluded that structured Covid-19 preventive protocols were available in sports arenas in the study area, with a high level of compliance with the Covid-19 preventive protocols among the athletes, spectators and sports administrators in the study area. It was recommended that sports organization authorities and the three stakeholders (athletes, spectators and sports administrators) should sustain and strengthen the implementation of the COVID-19 preventive protocols. In addition, the authorities should develop flexible frameworks that will enable adaptation of the existing COVID-19 protocols to solve or manage future occurrences of pandemics or health crises.

Keywords: *COVID-19 transmission prevention, Sports events, Health safety measures, Protocol adherence, Health protocols, Southwestern Nigeria*

Introduction

Sporting activities in all categories requires physical direct contact such as exchanging baton, handshakes, defending against opponents, celebrations and jubilation among players, hugging, among others. These had been the usual practice among sport men and women before COVID 19 broke out in February 2020. This deadly virus as infiltrate all aspects and walks of life, it has killed many people prematurely, spoilt businesses and investments among others. On February 28th, 2020, Nigeria reported its first index case, and since then there has been risen cases daily. In November 2021, Nigeria's Centre for Disease Control (NCDC) reported that out of 3,340,313 tested samples, 211,961 confirmed cases were reported, 5,817 active cases were reported, 203,248 discharged cases were reported, and 2,896 deaths were reported (Nigeria Centre for Disease Control NCDC, 2020).

The COVID-19 pandemic has significantly harmed athletes' preparation and performance, and it currently represents the biggest threat to the modern sports world as a whole. Ozil (2020) asserted that the COVID-19 occurrences has a variety of impacts on international athletic competition. The virus spread created social distance, which led to the closure of sporting venues, workplaces, and events. Due to how quickly the virus was circulating and the growing unknowledgeable of how terrible things could be, sports fans began to flee the area and investors stopped to invest. Their absence from the sporting arena had a negative impact on the clubs owners, almost all the football clubs downsize their staffs and reduced the wages of their employee, most of these clubs took a loan from financial institution before they were able to pay their workers.

Consequently, due to COVID 19 pandemic crowds of spectators were absent in the sporting arena for almost a year. The spectators, sports marketers and promoters, who financed, maintained and make the sport lively through purchase of game ticket and warm support to players on the field of play. According to the European Parliamentary Research Services in Katsarova, Chahri, and Killmayer (2021), COVID-19-related actions cost the EU-27 member states' gross domestic product, with most of the major international, local, regional, and national sporting events—from athletics championships to basketball games, marathons to football tournaments, handball to ice hockey, weightlifting to wrestling, rugby, cricket, yachting, and other sports have all been cancelled or postponed in order to safeguard the participants' health and the athletes. First time ever in the history of contemporary games, both the Olympics and the Paralympics were deferred, along with the Nigeria Sport Festival and the Euro 2020 football competition.

Subsequently, the sporting arena was open with guidelines from CDC to minimize the likelihood of transmission of the virus. WHO (2021) mandates that clubs hold athletic or sporting events in venues with assigned seating spaced widely enough for at least two meters of physical separation, temperature monitoring at entrances, seats numbering for contact tracing instances, and the provision of visual cues, such as wrist stamps and stickers, to help lower the likelihood of accidental contact. The club is required to provide access to handwashing stations, hand gel made with alcohol, and hygiene amenities at various locations inside the venue or accommodations for spectators at the arena (WHO, 2021). Due to high risk in

transmission of COVID 19 sports trainings have taken another method of operations as coaches now make use of virtual training session with their athletes, sports training arena ceased to be overcrowded with athletes, coaches, officials and spectators, the numbers of athletes who can occupy a training ground in a particular time has been minimized in such a way that, there must be at least six feet (2m distancing) between participants on training ground.

Wearing of face mask is also encouraged for participant training indoor in order to avoid face to face direct contact, the shaking of hands, hugging fellow athletes and other forms of direct physical contact during training period is strongly discouraged. According to the Centres for Disease Control and Prevention (CDC, 2020), it is highly recommended to routinely wash hands throughout trainings and to use alcohol-based hand sanitizers both during and after training. It also suggested that training sessions for athletes, coaches, officials, and spectators take place outdoors to lower the rate of transmission, particularly in environments with inadequate ventilation because fine droplets and aerosol particles can build up in the air. In an attempt to ensure safe sports participation in Nigeria, the Federal Ministry of Youth and Sports Development (FMYSD) has established a COVID-19 Code and Protocol for State Preparatory Camps and training facilities. However, there is a notable lack of literature on the state of preventive measures against COVID-19 in sports settings in Nigeria. This study aimed to explore the availability of and compliance with COVID-19 preventive protocols in sports arenas during training and competitions in Southwest Nigeria.

Objectives of the Study

The objectives of this study are to:

i. ascertain the availability of Covid-19 preventive protocols in sports arena in South western Nigeria; and
ii. investigate the level of compliance of athletes, officials and spectators with the Covid-19 preventive protocols in the study area.

Research Question

i. Are COVID-19 preventive protocols available in sports arenas in South western Nigeria?
ii. What is the level of compliance of athletes, officials, and spectators with the COVID-19 preventive protocols in the study area?

Materials and Methods

Sample and Sampling Procedure

A total of 220 respondents from four (4) states in Southwest Nigeria participated in this study, including 160 athletes, 20 sports administrators, and 40 spectators. The sampling procedure employed a multi-stage sampling approach that included cluster sampling, stratified sampling, random sampling, and convenience sampling techniques. The study population was categorized into six clusters (Ondo State, Ekiti State, Osun State, Oyo State, Lagos State, and Ogun State), from which four clusters (Ondo, Ekiti, Osun, and Oyo) were chosen for the study. Subsequently, the respondents were stratified into athletes, sports administrators, and sports spectators' strata. The sampling procedure was concluded by selecting 40 athletes

from each of the four states (Ondo, Ekiti, Osun and Oyo) using random sampling, while 5 sports administrators and 10 spectators were selected using the convenience sampling technique. This method aimed to ensure equitable representation of all relevant stakeholders in the research.

Data Collection

The study used a descriptive research methodology and collected data using a structured survey titled the "State Sports Administrators Questionnaire" (SSAQ) and the "State Athletes Welfare and Covid-19 Preventive Protocol Questionnaire" (SAWCPPQ). SAWCPPQ was used for data collection from State Athlete respondents. The research instrument consists of 4 sections which in total are made up of 41 items. The first section, consisting of 5 items, sought demographic information of the respondents. The second section is made up of 16 items with 3-point Likert scale options seeking to obtain data on the availability of COVID-19 preventive protocols in sports arenas. The third and fourth sections of the instrument were made up of 10 items each, which were designed to assess the level of compliance of athletes, spectators and sports administrators with COVID-19 preventive protocols in sports arenas in the study area in relation to adherence to the Federal Ministry of Youth and Sports Development's (FMYSD) set COVID-19 Code and Protocol in the States Preparatory Camps and training facilities.

Validity and Reliability of Instrument

The research instrument was assessed for content and face validity, with the focus on ensuring accurate measurements. A checklist focused on language clarity for the audience, adequacy and inadequacy of the content coverage, and its relevance to the research objectives was used to determine the instruments' applicability and usefulness for the study. The outcome of the evaluation indicated that the instrument was a very good one. Subsequently, to evaluate the instrument's reliability, a pilot test was conducted with 20 unrelated respondents. The internal consistency was assessed using the Pearson product-moment correlation coefficient. A retest was administered two weeks later, and reliability was tested again using the same method. The test-retest produced a correlation coefficient of 0.56, indicating a moderate, reliable result significant at the 0.05 level.

Data Analysis

Descriptive statistics were used to analyse the study's data. To characterize the respondents and compile the information on the level of adherence to the Covid-19 preventive code for sports, descriptive statistics including mean, standard deviation, frequency, and percentage counts were employed. The IBM Statistical Package for Social Sciences (IBM-SPSS version 25) was used for all analyses.

Results

Objective 1: to ascertain the availability of Covid-19 preventive protocols in sports arena in South western Nigeria

Table 1: Summary of Descriptive Analysis of Covid-19 Preventive Protocols Availability Scores (AS)

Groups	High (≥ 33)	Moderate (≥ 17-32)	Low (≤ 16)	Total
Ekiti State				
Athletes	27 (67.5%)	09 (22.5)	04 (10.0)	40 (100)
Sports Administrators	4 (80.0%)	01 (20.0)	00 (0.0)	5 (100)
Spectators	6 (60.0)	03 (30.0)	01 (10.0)	10 (100)
Total	**37 (67.3%)**	**13 (23.6%)**	**5 (9.1%)**	
Ondo State				
Athletes	31 (77.5)	07 (17.5)	02 (5.0)	40 (100)
Sports Administrators	4 (80.0)	1 (20.0)	00 (0.0)	5 (100)
Spectators	8 (80.0)	2 (20.0)	00 (0.0)	10 (100)
Total	**43 (78.2%)**	**10 (18.2%)**	**2 (3.6%)**	
Osun State				
Athletes	16 (40.0)	21 (52.5)	03 (7.5)	40 (100)
Sports Administrators	4 (80.0)	1 (20.0)	0 (0.0)	5 (100)
Spectators	8 (80.0)	2 (20.0)	0 (0.0)	10 (100)
Total	**28 (50.9%)**	**24 (43.6%)**	**3 (5.5%)**	
Oyo State				
Athletes	23 (57.5)	16 (40.0)	01 (2.5)	40 (100)
Sports Administrators	4 (80.0)	1 (20.0)	0 (0.0)	5 (100)
Spectators	4 (40.0)	6 (60.0)	0 (0.0)	10 (100)
Total	**31 (56.4%)**	**23 (41.8%)**	**1 (1.8%)**	
TOTAL	**139 (63.2)**	**70 (31.8)**	**11 (5.0)**	**220**

Table 1 shows the summary of the descriptive analysis of the availability of COVID-19 preventive protocols. Results from Table 1 revealed that a total of 37(67.3%) of respondents from Ekiti State affirmed that Covid-19 preventive protocols were highly available, 13(23.6%) of the respondents indicated that the protocols were moderately available, while 5(9.1%) indicated low availability of Covid-19 preventive protocols in sports arenas in Ekiti State. Furthermore, a total of 43(78.2%) of respondents from Ondo State affirmed that Covid-19 preventive protocols were highly available, 10(18.2%) of the respondents indicated that the protocols were moderately available, while 2(3.6%) indicated low availability of Covid-19 preventive protocols in sports arenas in the state.

The Table 1 further revealed that a total of 28(50.9%) of respondents from Osun State affirmed that Covid-19 preventive protocols were highly available, 24(43.6%) of the respondents indicated that the protocols were moderately available, while 3(5.5%) indicated low availability of Covid-19 preventive protocols in sports arenas in Osun State. Lastly, a total of 31(56.4%) of respondents from Oyo State affirmed that Covid-19 preventive protocols were highly available, 23(41.8%) of the respondents indicated that the protocols were moderately available, while 1(1.8%) indicated low availability of Covid-19 preventive protocols in sports arenas in the state. In addition, the total

availability score (AS) for the high, moderate and low availability across the states were 134(63.2%), 70(31.8%) and 11(5.0%) respectively.

Therefore, the result revealed that Covid-19 preventive protocols such as running water container with soaps are provided at designated locations, face mask, Officials positioned in locations to enforce the 2-meter physical distancing, Sufficient number of infrared thermometers at the entrance, Sufficient hand sanitizers for everyone at all entry points, COVID- 19 response units with ambulances are stationed on training grounds, Good health notices are placed throughout all locations, locker rooms, training facilities, Disposable plastic bags and bins provided as required, standby cleaning agent, training kit and suit were made available for individuals, among others were all available across the study area. This indicates the availability of a structured Covid-19 preventive protocols in sports arena in the study area.

Objective 2: to ascertain the availability of Covid-19 preventive protocols in sports arena in South western Nigeria

Table 2: Summary of Descriptive Analysis of Level of Compliance to Covid-19 preventive protocols

Respondents' Status	High	Moderate	Low	Mean ± S.D
Athletes	50	101	9	2.26 ± 0.55
Administrators	8	12	0	2.40 ± 0.50
Spectator	24	12	4	2.50 ± 0.68

Table 2 showed the summary of the level of compliance of the athletes, administrators and spectators with the Covid-19 preventive protocols. The responses were on a Likert scale of 3—High on the scale was scored 3, Moderate was 2, and Low was 1. Items not responded to were scored 0. The total score of each of the respondents was obtained by adding the scores in each item together. The mean and the standard deviation of the scores were determined. The maximum score obtainable for each group compliance level was 3. The mean score of the respondents was determined and expressed as a percentage. To express the mean score in percentage, the mean of each group's compliance level was divided by the maximum obtainable score and then multiplied by 100. For example, where the mean is 2.26, this translates to (2.26/3 x 100%) 75.33%. This gives a clear indication of the level of compliance of respondents.

A total of 50 out of 160 athletes, representing 31.3%, demonstrated a high level of compliance, 101 (63.1%) exhibited moderate compliance, and 9 (5.6%) demonstrated a low level of compliance. A total of 8 out of 20 administrators (40%) demonstrated a high level of compliance, and the remaining 12 (60%) demonstrated a moderate compliance level. Among the spectators, 24 of 40 (60%) demonstrated high compliance, 12 (30%) moderate compliance, and 4 (10%) low compliance with the Covid-19 preventive protocols. The mean and standard deviation values of the athletes' compliance on a 3-point scale are 2.26 ± 0.55, which translates to (2.26/3 x 100%) 75.33% compliance level. The mean and standard deviation values of the spectators' compliance are 2.40 ± 0.50, which translates to (2.40/3 x 100%) 80% compliance level. Lastly, the mean and standard deviation values of the spectators' compliance are 2.50 ± 0.68, which translates to (2.50/3 x 100%) 83.33% compliance level.

Geisinger (2013) recommended guidelines for scoring and interpretation of various types of assessments, including rating scales, specifically the guidelines for scales with 3-4 response options thus:

Score (%)	Ratings
70-100%:	High Scores (Reflect a strong presence of the construct).
50-69%:	Moderate Scores (Suggest a moderate level of the construct).
Below 50%:	Low Scores (Indicate a relatively low level of the construct).

Based on Geisinger's guidelines, the compliance scores of 75.33%, 80%, and 83.3% fall in the rating of the High Scores category, reflecting the presence of a high level of compliance with the Covid-19 preventive protocols among the athletes, spectators, and sports administrators in the study area.

Discussion of findings

The findings from Table 1 affirmed the availability of structured Covid-19 preventive protocols in sports arenas in the study area. This is consistent with earlier research by FIFPRO (2020), who indicated that COVID-19 presents considerable obstacles for event planning. The challenge for the organizers will be to put all preventative measures into action. The safety of the event will depend on how well the local organizing committee and the health authorities get along. Similar findings were made by the World Health Organization (2020), which showed that countries must take all necessary measures to prevent instances from developing into clusters and clusters from developing into deadly outbreaks. They need to use the tools for testing, diagnosis, isolation, contact tracking, and quarantine; they need to involve everyone in the response. Additionally, according to the Emergency Operations Centre (EOC) (2020), the country's immediate response included the activation of the national EOC at the NCDC as soon as possible, the establishment of the multi-sectorial COVID-19 PTF, and draconian measures to halt foreign travel and impose a time-limited lockdown in highly affected places. Nigeria certainly reduced the rate of viral transmission by implementing this treatment package quickly and gained more time to establish a reliable case detection, testing, and treatment centre capability.

The findings from Table 2 indicated a high level of compliance with the Covid-19 preventive protocols among the athletes, spectators and sports administrators in the study area. This finding is in line with the previous study by the COVID-19 PTF (2021), which revealed that Nigeria responded to COVID-19 quickly and firmly, enhancing its pre-existing pandemic readiness and learning from other parts of the world where transmission had already begun, which certainly reduced the rate of viral transmission in Nigeria. The study's findings corroborate Patel, Jernigan, Abdirizak, Abedi, Aggarwal, and Albina (2019), who stated that the key to flattening the curve of the Covid-19 outbreak is to sensitize and mobilize citizens who must assume responsibility through firm application of a non-pharmaceutical preventive approach.

Conclusion

The study concluded that structured COVID-19 preventive protocols were available in sports arenas within the study area. Overall compliance with these

protocols was **moderate to high**, with sports administrators and spectators demonstrating higher adherence than athletes.

Recommendations

Based on the findings and conclusion of this study, it was recommended that:

- The sports organization authorities and the three stakeholders (athletes, spectators and sports administrators) should sustain and strengthen the implementation of the Covid-19 preventive protocols.
- The authorities should develop flexible frameworks that will enable adaptation of the existing COVID-19 protocols to solve or manage future occurrence of pandemics or health crises.
- National sports authority should advocate for a culture of health safety in sports arenas across the nation.

References

Centre for Disease Control Prevention (CDC). *Human Coronavirus Types. National Centre for Immunization and Respiratory Diseases (NCIRD),* Division of Viral Diseases, January 10. 2020 https://www.cdc.gov/coronavirus/types.html [accessed 11 March, 2021]

FIFPRO, (2020). *Covid-19: implications for professional women's football*. www.fifpro.org Retrieved 6/6/2021

Geisinger, K. F. (Ed.). (2013). *APA handbook of testing and assessment in psychology*. Washington, DC: American Psychological Association.

Katsarova, I., Chahri, S., & Killmayer, L. (2021). How coronavirus infected sport (EPRS Briefings PE 659.449). *European Parliamentary Research Services*. https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/659449/EPRS_BRI(2021)659449_EN.pdf

NCDC Situation Report (PDF) (6 March 2020). Retrieved 11 March 2021 from https://www.ncdc.gov.ng

Ozili, P. K. (2020). *Covid-19 pandemic and economic crisis: The Nigerian experience and structural causes; Central Bank of Nigeria*. Munich Personal RePEc Archive. Retrieved on 6/5/2021.

Patel, A., Jernigan, D. B., & 2019- nCoV CDC Response Team (2020). Initial public health response and interim clinical guidance for the 2019 novel coronavirus outbreak – United States, December 31, 2019-February 4, 2020. *American journal of transplantation : official journal of the American Society of Transplantation and the American Society of Transplant Surgeons*, *20*(3), 889–895. https://doi.org/10.1111/ajt.15805

World Health Organization. (2020). *Coronavirus. WHO*. https://www.who.int/ health-topics/coronavirus [accessed 11 March, 2021].